**Supplemental Text S2. Results of multiple linear regression analysis between network properties and confounding variables.**

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| --- | --- | --- | --- | --- | --- | --- |
| Confounding Variables | Coefficients | Std. Error | T Stat. | P-value | Lower 95% | Upper 95% |
| lasso |
| Clustering Coefficient HCC1 (Adj. Rsqr = -0.037, P = 0.878) |
| Intercept | 1.3082 | 0.0468 | 28.4128 | <0.0010 | 1.2165 | 1.4001 |
| Gender | -0.0100 | 0.0171 | -0.582 | 0.5634 | -0.0454 | 0.0256 |
| Age | 0.0012 | 0.0014 | 0.6512 | 0.5178 | -0.0012 | 0.0024 |
| Educational Attainments | 0.0000 | 0.0073 | 0.0523 | 0.9586 | -0.0128 | 0.0138 |
| Clustering Coefficient HCC2 (Adj. Rsqr = 0.021, P = 0.230) |
| Intercept | 0.8386 | 0.1067 | 7.9291 | <0.0010 | 0.6275 | 1.0494 |
| Gender | 0.0611 | 0.0407 | 1.5163 | 0.1342 | -0.0197 | 0.1416 |
| Age | 0.0012 | 0.0028 | 0.4617 | 0.6464 | -0.0031 | 0.0056 |
| Educational Attainments | 0.0163 | 0.0151 | 1.0666 | 0.2914 | -0.0145 | 0.0462 |
| Clustering Coefficient HCC3 (Adj. Rsqr = -0.003, P = 0.434) |
| Intercept | 0.3107 | 0.0574 | 5.4392 | <0.0010 | 0.1961 | 0.4245 |
| Gender | 0.0280 | 0.0224 | 1.2960 | 0.2000 | -0.0153 | 0.0711 |
| Age | -5.625E-5 | 0.0014 | -0.0515 | 0.9601 | -0.0026 | 0.0024 |
| Educational Attainments | 0.0074 | 0.0080 | 0.8172 | 0.4175 | -0.0104 | 0.0235 |
| group\_lasso |
| Clustering Coefficient HCC1 (Adj. Rsqr = 0.062, P = 0.174) |
| Intercept | 1.6268 | 0.0774 | 21.0141 | <0.0010 | 1.4716 | 1.7801 |
| Gender | -0.0142 | 0.0293 | -0.4787 | 0.6354 | -0.0735 | 0.0453 |
| Age | -0.0044 | 0.0021 | -1.6828 | 0.1166 | -0.0072 | 0.0013 |
| Educational Attainments | -0.0082 | 0.0116 | -0.7382 | 0.4634 | -0.0304 | 0.0143 |
| Clustering Coefficient HCC2 (Adj. Rsqr = 0.146, P = 0.205) |
| Intercept | 1.2345 | 0.1112 | 11.1140 | <0.0010 | 1.0124 | 1.4566 |
| Gender | 0.0071 | 0.0428 | 0.1661 | 0.8698 | -0.0772 | 0.0916 |
| Age | 0.0088 | 0.0025 | 1.3926 | 0.1244 | 0.0041 | 0.0121 |
| Educational Attainments | 0.0011 | 0.0163 | 0.0395 | 0.9695 | -0.0304 | 0.0326 |
| Clustering Coefficient HCC3 (Adj. Rsqr = -0.009, P = 0.492) |
| Intercept | 0.4282 | 0.0877 | 4.9391 | <0.0010 | 0.2554 | 0.6012 |
| Gender | 0.0397 | 0.0336 | 1.1883 | 0.2392 | -0.0275 | 0.1053 |
| Age | 2.366E-6 | 0.0024 | 0.0013 | 0.9994 | -0.0034 | 0.0030 |
| Educational Attainments | 0.0100 | 0.0124 | 0.7994 | 0.4273 | -0.0151 | 0.0344 |
| Sparse group lasso |
| Clustering Coefficient HCC1 (Adj. Rsqr = -0.0296, P = 0.5914) |
| Intercept | 1.5296 | 0.1190 | 12.8578 | <0.0010 | 1.2879 | 1.7714 |
| Gender | -0.0266 | 0.0476 | -0.5578 | 0.5806 | -0.1234 | 0.0702 |
| Age | -0.0024 | 0.0023 | -1.0553 | 0.2987 | -0.0071 | 0.0022 |
| Educational Attainments | -0.0094 | 0.0167 | -0.5642 | 0.5763 | -0.0434 | 0.0245 |
| Clustering Coefficient HCC2 (Adj. Rsqr = -0.0749, P = 0.9349) |
| Intercept | 1.5440 | 0.1834 | 8.4171 | <0.0010 | 1.1712 | 1.9168 |
| Gender | -0.0212 | 0.0734 | -0.2886 | 0.7746 | -0.1705 | 0.1281 |
| Age | -0.0016 | 0.0035 | -0.4558 | 0.6514 | -0.0088 | 0.0056 |
| Educational Attainments | -0.0073 | 0.0258 | -0.2831 | 0.7788 | -0.0597 | 0.0451 |
| Clustering Coefficient HCC3 (Adj. Rsqr = -0.0176, P = 0.5096) |
| Intercept | 0.8625 | 0.1761 | 4.8972 | <0.0010 | 0.5046 | 1.2204 |
| Gender | -0.0524 | 0.0705 | -0.7425 | 0.4629 | -0.1957 | 0.0910 |
| Age | -0.0029 | 0.0034 | -0.8408 | 0.4064 | -0.0097 | 0.0040 |
| Educational Attainments | -0.0210 | 0.0247 | -0.8492 | 0.4017 | -0.0713 | 0.0293 |

The range of age is 17–51 years. Optional values of gender are male and female. Optional values of educational attainments are illiteracy, primary school, junior high school, senior high school, junior college, college, graduate degree and above. Adj. Rsqr, adjusted R square.Coefficients, regression coefficient. Std. Error, standard error. T stat., T statistic. Lower 95%, low bound of 95% confidence limits. Upper 95%, upper bound of 95% confidence limits.